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Cont.
subjecting the photocatalyst to photoexcitation to render the surface of the composite hydrophilic, wherein, after said photoexcitation, the surface of the composite has a water wettability of less than about 20° in terms of the contact angle with water;

subjecting said composite to ~~deposits and contaminants~~ dirt in air or environmental precipitation; and

washing away the ~~deposits and contaminants~~ dirt on the surface of the composite by occasional contact with water.

Please cancel claim 320.

II. REMARKS

The applicants wish to thank the Examiner for the interview on April 22, 2003. The substance of the interview is summarized in the Examiner Interview Summary Record. The applicants also expressed their intent to file a request for continuing examination in order to set forth a response detailing their arguments in response to the Office Action of January 30, 2003.

A. Section 112 Rejections

Concerning the objection to claims 301 and 312, the applicants will elect to retain the "less than about" phrasing. The Examiner's comments are noted; however, for the reasons stated in the prior response, the applicants believe the existing phrase is sufficiently clear and definite. The applicants understand that no rejection has been made on the basis of this phrasing.

The applicants respectfully disagree with the Examiner's rejection of claims 308 and 320. However, this dispute is moot because the applicants are canceling these dependent claims.

The Examiner has rejected independent claim 312 (and its dependent claims) on written description grounds. In this regard, the Examiner has objected to the phrase "deposits or contaminants" as being overly broad. The phrase was intended to refer simply to dirt in air and

environmental precipitation, and the claim has been amended to clarify this intended meaning. Support for this amendment may be found at, *e.g.*, page 5, lines 12-22, and page 6, line 33 to page 7, line 2 (discussing that building materials are subjected to air-borne and precipitation-borne "grime" and "dust particles," resulting in patterns of "dirt, stain or smudge"; "[a]nother object of the invention is to provide a method wherein the surface of buildings, window glasses, machinery or articles is rendered highly hydrophilic to thereby prevent fouling of or to permit self-cleaning of or to facilitate cleaning of the surface"). In view of this clarifying amendment, the applicants respectfully request that the Examiner withdraw the rejection of claims 312 *et seq.* under 35 U.S.C. § 112, first paragraph.

The applicants are uncertain as to the nature of the rejection, if any, of claims 301 *et seq.* under § 112. In this regard, the Examiner has expressed concerns regarding the use of the word "humidity" in the absence of terms specifying the different levels of humidity that will induce fogging. The applicants believe it is unnecessary to specify the different levels of humidity that will induce fogging in various conditions. The invention works to reduce fogging in various conditions (various substrates, humidity levels, etc.), and, therefore, is not limited to use at a particular humidity level. The invention as claimed is supported and enabled by the written description.

B. The Double-Patenting Rejection

The applicants are filing herewith a terminal disclaimer. Accordingly, the applicants respectfully request withdrawal of the double-patenting rejection.

C. The Obviousness Rejections

All of the remaining rejections are based on 35 U.S.C. § 103, regarding the requirement of nonobviousness.

1. The Governing Legal Principles

The test of obviousness under 35 U.S.C. § 103 is whether the subject matter of the claimed invention would have been obvious to one ordinarily skilled in the art at the time the invention was made. *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999). The analysis must be based on several factual inquiries: (1) the scope and content of the prior art; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art at the time of the invention; and (4) any objective evidence of nonobviousness. *Id.*; see also *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

A determination of obviousness cannot be based on hindsight by picking and choosing among the individual elements of assorted prior art references to recreate the claimed invention. *Akzo N.V. v. United States Int'l Trade Comm'n*, 808 F.2d 1471, 1481 (Fed. Cir. 1986). A determination that combination claims are obvious based on finding similar elements in separate prior art patents would be "contrary to statute and would defeat the congressional purpose in enacting Title 35." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1577 (Fed. Cir. 1987). There must be some teaching or suggestion in the references to support their use in the particular claimed combination. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999); *Smithkline Diagnostics v. Helena Labs. Corp.*, 859 F.2d 878, 887 (Fed. Cir. 1988).

When expert opinion testimony is provided in a § 103 determination, it is entitled to some weight and may be relied on. *Ashland Oil v. Delta Resins & Refractories*, 776 F.2d 281, 294 (Fed. Cir. 1985). As discussed further below, the applicants have submitted the expert opinion

of Toshiya Watanabe in the form of a Rule 1.132 declaration. Mr. Watanabe provides compelling testimony of the nonobviousness of the present claims.

Further compelling evidence is the objective evidence of nonobviousness presented by the applicants. It should be noted that under certain circumstances, objective evidence may be particularly strong and entitled to such weight that it is decisive of the obviousness inquiry. *Ashland Oil*, 776 F.2d at 306. Such evidence must always be considered. *In re Sernaker*, 702 F.2d 989, 996 (Fed. Cir. 1983). Objective evidence of commercial success is a strong factor favoring nonobviousness. *Akzo N.V.*, 808 F.2d at 1481. Such evidence provides an inference that others attempted to solve the problem addressed by the claimed invention but failed. (*Donald S. Chisum, Patents*, § 5.05 [2] (1996).) Here, the applicants have supplied the Rule 1.132 declaration of Yukio Takano detailing the licensing and commercial recognition achieved by the claimed invention. As discussed further below, the applicants submit that these objective considerations establish the nonobviousness of the claimed invention.

2. Licensing And Commercial Recognition

The owner of the present application and related patents (e.g., U.S. Patent Nos. 6,013,372 and 6,090,489) is Toto Ltd. An affiliate of Toto Ltd. -- Toto Frontier Research Ltd. ("TFR") -- has responsibility for licensing of Toto's photocatalytic superhydrophilic coating technology to third parties. This technology includes the present application.

More than thirty companies have taken licenses under Toto's photocatalytic superhydrophilic coating technology. Four of these licenses include the United States as the licensed territory (and, accordingly, include the present application as part of the licensed

patents). One of these licensees is the well-known glass manufacturer PPG Industries.¹ These facts, which are confirmed in the Declaration of Yukio Takano submitted herewith, show that the invention has been recognized by others.

PPG Industries, moreover, is in the process of introducing a self-cleaning window glass product that utilizes a photocatalytic superhydrophilic coating according to the present invention. When PPG announced its plans in this regard, it received attention in television news programs, which lauded the invention and noted the need and desirability of the product. These facts, also set forth in the Takano Declaration, show further recognition by others as well as long-felt need.

The foregoing facts are objective criteria that support a finding of nonobviousness of the present invention. See, e.g., *In re Piasecki*, 745 F.2d 1468, 1473 (Fed. Cir. 1984) (involving evidence of recognition by others and commercial interest); *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 56 (1923) (licensing found to be "weighty evidence" of validity); *Minnesota Mining & Mfg. Co. v. Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1575 (Fed. Cir. 1992) (licensing found to be "solid evidentiary foundation" for nonobviousness determination); *In re Beattie*, 974 F.2d 1309, 1313 (Fed. Cir. 1992) (praise by others).

3. The Examiner's References

The Examiner has set forth several obviousness rejections of the pending claims. Those rejections are based on each of several primary references: (a) Field, (b) Murasawa, (c) Heller, (d) any one of three Japanese laid-open patent publications, and (e) Fukayama. These rejections are addressed below in the order in which they are set forth in the Office Action.

¹ The applicants previously indicated, by mistake, that Pilkington was one of the licensees of Toto's coating technology. Pilkington has been offered a license but, so far, has declined to take a license on the terms offered by TFR.

a. Field, Alone Or In Combination With Okaniwa

A first obviousness rejection is based on U.S. Patent No. 3,640,712 to Field ("Field"), alone or in combination with Japanese Laid-Open Publication No. 149281/1978 to Okaniwa *et al.* ("Okaniwa").

(i) The Field Patent

Field is directed to the problem of image formation:

This invention is directed to employment of a medium to produce an image. The image is such that it is hydrophobic when unexposed and hydrophilic when exposed. The hydrophobicity-hydrophilicity difference is employed to produce a useful or visible image.

(Field at col. 1, ll. 5-10.) The Field process is an alternative to, for example, silver halide film media. (See Field at col. 1.)

In the Field process, a photosensitive material (*see, e.g.*, Field at col. 3, ll. 17-41) is dispersed in a hydrophobic material (such as hydrophobic silicone; *see, e.g.*, col. 4, ll. 8-11).

Field describes the photosensitive material:

The sensitive material, sensitization enhancing material are both usually in a finely comminuted form. The dry powder materials are mixed together with the hydrophobicity inducing material and with the desired binder and solvent, for example, toluene, suitably in an orbital ball mill, jar mill or vibratory mill until thorough dispersion of the ingredients is achieved. The mixture is then applied to a suitable substrate by conventional knife-coating equipment so as to form a film thereon having a wet thickness of 25-100 microns. For example, in general, the dry thickness of the film varies between 25 to 50 percent of the wet thickness. Upon drying the film is ready for use.

(Col. 4, ll. 51-62.) Field states that, when exposed to light, the photosensitive material causes the exposed areas to become hydrophilic -- "[t]he medium is completely hydrophobic before exposure to the minimum value of light energy given above and is hydrophilic when subjected to

full exposure." (Col. 6, ll. 30-33.) "Following the exposure and development in an aqueous medic, tenaciously absorbed water images are formed on the surface of the hydrophilic exposed areas." (Col. 5, ll. 5-7.)

Field criticizes the prior art because, for some prior art film media, long exposure times were required. (Col. 1, ll. 21-32.) "Thus, the [prior art] silver halide process requires considerable development time, *while the remaining [prior art] processes require a considerable exposure time*, so that none of the prior art processes are capable of quickly producing a usable image from a normal photon source." (*Id.*; italics added.) Accordingly, the Field process contemplates relatively short exposure times.

Field describes the exposure intensity as between 10 ergs/cm² to 1,000 ergs/cm². (Col 6, ll. 26-30.) Field's upper exposure limit (1,000 ergs/cm²), therefore, is equivalent to 0.1 mW-sec/cm² of total exposure. This amount of light exposure is very small compared to the quantities used in the present application to cause photocatalysis to occur. For example, the present application describes using sunlight (whose UV intensity is about 0.1 to 1.0 mW/cm²), but this intensity is applied for an hour or more, resulting in an exposure of many milliwatt-seconds. (See, e.g., Example 1 (0.5 mW/cm² for one hour).) In contrast, Field uses comparatively low total exposure intensities to achieve exposure of the Field film medium.²

Field does not describe, anywhere, using a coating of any kind to prevent dirt in air or environmental precipitation from staying on a surface. On the contrary, Field is concerned with causing pigments and dyes to *stick to* surfaces to form an image. It is not inherent that Field's film would be exposed to dirt in air or environmental precipitation, and Field does not expressly

² At a UV intensity of 0.1 mW/cm², Field would require (at most) an exposure time of a minute or so to provide the total photon requirement to create an image. This is well below the times used in the present application to allow for self-cleaning and anti-fogging capability.

or inherently disclose any methods of self-cleaning. Likewise, Field does not expressly or inherently disclose any antifogging methods.

(ii) Okaniwa

Okaniwa discloses a hydrophilic film laminate. The Okaniwa laminate is formed by coating an alkoxide of titanium on a substrate. In the Okaniwa examples, the laminate is air-dried, or air-dried and then heated to 110°C. This purportedly results in formation of hydrolyzates of the alkoxide of titanium.

In the examples disclosed in Okaniwa, the unexposed areas have water contact angles of 37° to 56°. This is well below the typical water contact angle of hydrophobic silicone resin. (See, e.g., present application at page 65, Table 10, showing 90° contact angle with water for a silicone coating.)

The alkoxides of titanium used in Okaniwa do not appear to ever form any substantial portion of crystalline titania. The only heating step taught in Okaniwa is to 110°C. This is well below levels which the present inventors found necessary to generate crystalline titania from amorphous titania. (See Declaration of Toshiya Watanabe, submitted herewith; *see also* Table 1 at page 36 of the present application.) As shown in Table 1 of the present application, degree of heating affects the formation of the crystalline form of titania, and the presence or absence of crystalline titania affects whether the titania has photocatalytic function. While the coating in Okaniwa is described as being hydrophilic, it does not appear to be from the presence of a photocatalyst; rather, it may result simply from the generation of hydrophilic species in the chemical reactions described on page 2 of Okaniwa.

(iii) Field Does Not Render The Pending Claims Obvious

As discussed above, Field does not disclose or suggest a method to prevent fogging or a method to keep a surface clean when subject to dirt in air or environmental precipitation. Rather, the subject matter of Field is image-forming film. These aspects of the claims are absent from Field.

Further, Field does not disclose rendering a surface hydrophilic such that it has a water contact angle of 10° or less. Such a degree of hydrophilicity is plainly not inherent, as it is possible to have higher water contact angles. While Field is certainly concerned with having a *difference* between hydrophilic exposed areas and hydrophobic unexposed areas of the film, the absolute degree of hydrophilicity is not stressed or even mentioned. Field provides no motivation or suggestion to decrease water contact angle to less than 10°, as that does not appear to be necessary to image formation. *See, e.g., In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) ("the best defense against . . . hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references").

Okaniwa does not provide any motivation to modify Field. First, the ordinary skilled artisan would not have been inclined to combine Okaniwa with Field because Okaniwa employs only an alkoxide of titanium coating -- Okaniwa does not employ a hydrophilic binder, as Field does. It appears highly doubtful that the alkoxide of titanium coating material in Okaniwa could be substituted for the particulate ("finely comminuted," "dry powder") photosensitive material in Field. If it were substituted, it is unknown what the degree of hydrophilicity would be (presumably it would be less than the levels found in Okaniwa, since the alkoxide of titanium would be diluted with hydrophobic resin). And even if one speculated on the hydrophilicity of the Field coating with Okaniwa's alkoxide of titanium substituted into it, such a coating would

not be operating with a photocatalyst, since Okaniwa's alkoxide of titanium would not appear to have any significant photocatalytic activity.

The obviousness rejection is further rebutted by secondary considerations of nonobviousness. The licensing of this technology by Toto's affiliate, TFR, and the praise it has received, support a conclusion of nonobviousness. See, e.g., *Minnesota Mining & Mfg. Co.*, *supra*, 976 F.2d at 1575; *In re Piasecki, supra*, 745 F.2d at 1473-74. Accordingly, the applicants respectfully request withdrawal of this rejection.

b. Murasawa, Alone Or In Combination With Okaniwa

A second obviousness rejection is based on U.S. Patent No. 5,547,823 to Murasawa *et al.* ("Murasawa"), alone or combination with Okaniwa.

(i) Murasawa

Murasawa is directed to photocatalytic coatings used for sterilization and decomposition purposes. (See, e.g., Murasawa at col. 6, ll. 17-23 -- composite "can cause purification and sterilization of products containing deleterious materials, malodorous materials and oily materials as well as decomposition of such materials which come into the vicinity of the photocatalyst particles by irradiating with a ray having a wavelength corresponding to not less than the band gap energy"). Murasawa's composite is comprised of a substrate having particles of a photocatalyst (such as titania) adhered to the substrate by a less degradative adhesive. Murasawa contains no disclosure of a method to reduce fogging, or a method to keep surfaces clean from dirt in air or environmental precipitation. Likewise, Murasawa contains no disclosure of hydrophilicity or of particular water contact angles; Murasawa is unconcerned with such features.

(ii) Okaniwa

The Okaniwa reference is discussed above. It is unconcerned with sterilization or the decomposition of organic materials and would not appear to inherently cause decomposition of organic materials.

(iii) Murasawa Does Not Render
The Pending Claims Obvious

Murasawa does not render any of the pending claims obvious because, among other things, it does not disclose or suggest any methods of reducing fogging or maintaining a surface of a composite in a clean state. It also does not disclose making a surface hydrophilic to a level below a water contact angle of 10° (claim 301) or 20° (claim 312).

There would have been no motivation to combine Murasawa with Okaniwa. Murasawa is unconcerned with hydrophilicity. Further, Murasawa involves dispersing particles of photocatalyst in a less degradative adhesive. Since Okaniwa includes no discussion or concern with photocatalysis, photocatalysts, or the dispersion of particulate material in a binder or adhesive, there is a complete absence of a motivation to modify Murasawa in view of Okaniwa. Indeed, the Examiner has not cited any portion of Murasawa that provides a motivation or suggestion to combine it with Okaniwa.

In addition, the particular levels of hydrophilicity cited in the pending claims are not expressly or inherently taught in Murasawa. The extent of hydrophilicity achieved by a surface may be affected by a number of variables, including, for example, the length of time of exposure to irradiation (*see, e.g.*, Table 14 of the present application, at page 80), and the amount of crystalline titania present in the coating (*see, e.g.*, Table 1 of the present application, page 36). Nothing in Murasawa demonstrates that its coatings would *necessarily and inevitably* have the required water contact angles, and, accordingly, these characteristics may not be deemed to be

inherently present in Murasawa. See, e.g., *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999); *In re Oelerich*, 666 F.2d 578, 581-82 (C.C.P.A. 1981).

Further, for a characteristic to be inherently present in a prior art reference, its presence must be recognized by persons of ordinary skill. See, e.g., *In re Robertson*, *supra*, 169 F.3d at 745; *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268-69 (Fed. Cir. 1991). In the present circumstances, the ordinary skilled artisan would not have recognized the claimed levels of hydrophilicity in Murasawa. Nothing in Murasawa provides information to the ordinary skilled artisan that would somehow result in recognition that the required water contact angles are present or that variables affecting water contact angles were controlled to maintain them below 20° or 10°.

Finally, secondary considerations further support a finding of nonobviousness. These secondary considerations are discussed above and apply equally to the § 103 rejections based on Murasawa.

For all of the foregoing reasons, the applicants respectfully request that the rejections based on Murasawa be withdrawn.

c. Heller, Alone Or In Combination With Okaniwa

A third obviousness rejection is based on U.S. Patent No. 5,616,532 to Heller *et al.* ("Heller"), alone or in combination with Okaniwa.

(i) Heller

Heller is directed to photocatalytic coatings containing a photocatalyst and certain binders. (Heller at col. 1, ll. 21-23.) "The binders permit the photocatalyst to adhere to a surface without the loss of chemical reactivity of photocatalyst." (*Id.* at ll. 23-25.) "The photocatalyst may catalyze oxidation or reduction reactions which serve to degrade a contaminant to a less

noxious compound." (Col. 9, ll. 12-14.) Despite the presence of the photocatalyst, the binder purportedly is not degraded, and its appearance is not altered. (Col. 3, ll. 5-7.)

Heller's photocatalysts are particulate in form. "The photoactive catalyst particles can be approximately between 1 and 100 nm in diameter, however, the photocatalytic properties of smaller particles are superior to those of the larger particles." (Col. 8, ll. 40-43.) "The preferred photocatalyst particles are between about 1 and about 50 nm in diameter, consisting of approximately 1-10 nm crystallites. (*Id.* at ll. 43-45.)

Heller contains no disclosure of highly hydrophilic surfaces. On the contrary, Heller prefers hydrophobic coatings and even describes using a "hydrophobic enhancer." (Col. 9, l. 35 *et seq.*) Heller states: "In addition, a hydrophobic overcoating applied to a photocatalyst coated surface enhances the activity of the photocatalyst in its oxidation of organic phase soluble compounds, that is compounds more soluble in organic solvents than in water. This enhanced activity is seen whether the photocatalyst is bound to a surface by conventional sintering methods or when the photocatalyst is bound to a surface via the binder compositions of the present invention." (Col. 9, ll. 42-50.) Heller states that the hydrophobic enhancer increases the contact angle with water by at least about 20° and preferably by about 40°. (*Id.* at ll. 51-53.) "In a preferred embodiment, the contact angle between the coated surface and water when the third phase is air is between about 90° and 180°. (*Id.* at ll. 54-56.)

(ii) Okaniwa

The Okaniwa reference is discussed above.

(iii) Heller Does Not Render
The Pending Claims Obvious

Heller does not render any of the pending claims obvious because, among other things, it

does not disclose making a surface hydrophilic to a level below a water contact angle of 10° (claim 301) or 20° (claim 312). On the contrary, Heller prefers hydrophobic surfaces.

There would have been no motivation to combine Heller with Okaniwa. Heller prefers hydrophobicity; therefore, Okaniwa's opposite interest in hydrophilicity teaches away from Heller and constitutes a reason why the two references would not have been combined by the ordinary skilled artisan. There certainly would not have been any motivation to *increase* hydrophilicity in Heller's coating. Further, Heller involves the dispersion of photocatalyst particles in a purportedly non-degrading binder. Since Okaniwa includes no discussion or concern with photocatalysis, photocatalysts, or the dispersion of particulate material in a binder or adhesive, there is, *a fortiori*, an absence of a motivation to modify Heller in view of Okaniwa. Again, the Examiner has cited no portion of Heller that provides a motivation or suggestion to combine it with Okaniwa.

Finally, secondary considerations further support a finding of nonobviousness. These secondary considerations are discussed above and apply equally to the § 103 rejections based on Heller.

For all of the foregoing reasons, the applicants respectfully request that the rejections based on Heller be withdrawn.

- d. Japanese Laid-Open Patent Application
Nos. 09-227157, 09-227158 And 09-235140

The Examiner has also rejected claims based on Japanese Laid-Open Patent Application Nos. 09-227157, 09-227158 and 09-235140. All of these references bear publication dates in September 1997. This publication date is after the filing date of the grandparent PCT application to which the present application claims priority. A certified translation of this PCT application (PCT/JP96/00733) is submitted herewith. In view of the foregoing, the applicants believe that

the above-listed Japanese patent references are not prior art, and withdrawal of these rejections is respectfully requested.

e. Fukayama, Alone Or In Combination With Okaniwa

An additional obviousness rejection is based on an abstract titled "Highly Transparent and Photoactive TiO₂ Thin Film Coated on Glass Substrate," authored by Fukayama *et al.* ("Fukayama"), alone or in combination with Okaniwa.

(i) Fukayama

The Fukayama abstract discloses a photoactive TiO₂ thin film on a glass substrate. Fukayama states that the coating "might be practically applicable to window and glassware." (See Introduction to Fukayama.) "These TiO₂ coated glasses are expected to have deodorizing, antibacterial, and anti-fouling functions." (*Id.*) No mention is made of antifogging or self-cleaning methods, nor does Fukayama contain any disclosure of hydrophilicity or particular water contact angles.

(ii) Okaniwa

The Okaniwa reference is discussed above.

(iii) Fukayama Does Not Render
The Pending Claims Obvious

Fukayama does not render any of the pending claims obvious. It completely lacks disclosure of methods of reducing fogging or keeping a surface clean of dirt in air or environmental precipitation. Such processes are not somehow inherent in the disclosure of Fukayama.

Fukayama also does not disclose any water contact angles for its coating. Even if one speculates that the contact angle was less than 20°, there is no reason to believe that the ordinary

skilled artisan would have recognized that such was the case.³ The skilled artisan plainly would not have assumed or understood that Fukayama had such a highly hydrophilic surface, particularly in view of variables that may affect degree of hydrophilicity.

As with the other references relied on by the Examiner, there would have been no motivation to combine Fukayama with Okaniwa, since Fukayama expresses no desire to increase hydrophilicity. The combination of these references is purely a matter of using impermissible hindsight.

Further, secondary considerations support the nonobviousness of the present claims over Fukayama. These secondary considerations are discussed above and constitute objective evidence of nonobviousness.

Finally, even if Fukayama were deemed somehow to disclose the present invention, it is not prior art. Its earliest possible publication date is March 20, 1995, which is also the filing date of the earliest foreign priority application. A certified translation of that priority application is being filed with this Amendment and Response.

In view of the foregoing, the applicants respectfully submit that the rejections based on Fukayama be withdrawn.

CONCLUSION

For all of the foregoing reasons, the applicants respectfully request that all of the pending claims be allowed.

³ Moreover, the doctrine of inherency requires that there be no speculation about the property in question. See, e.g., *Continental Can, supra*, 948 F.2d at 1268-69 (inherency is not a matter of "probabilities or possibilities").

July 23, 2003

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'C. Griffith', written over a horizontal line.

Calvin P. Griffith
Reg. No. 34,831
JONES DAY
North Point
901 Lakeside Avenue
Cleveland, OH 44114
(216) 586-7050